

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
7 July 2005 (07.07.2005)

PCT

(10) International Publication Number  
**WO 2005/062654 A1**

(51) International Patent Classification<sup>7</sup>: **H04Q 7/38**,  
H04L 12/56

(SE). WESTBERG, Lars [SE/SE]; Långtora Grän,  
ENKÖPING, SE-745 96 (SE).

(21) International Application Number:  
PCT/SE2004/000478

(74) Agent: DR LUDWIG BRANN PATENTBYRÅ AB; P.O.  
Box 17192, S-104 62 Stockholm (SE).

(22) International Filing Date: 30 March 2004 (30.03.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0303463-4 22 December 2003 (22.12.2003) SE

(71) Applicant (for all designated States except US): TELE-  
FONAKTIEBOLAGET LM ERICSSON (PUBL)  
[SE/SE]; STOCKHOLM, SE-126 25 (SE).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

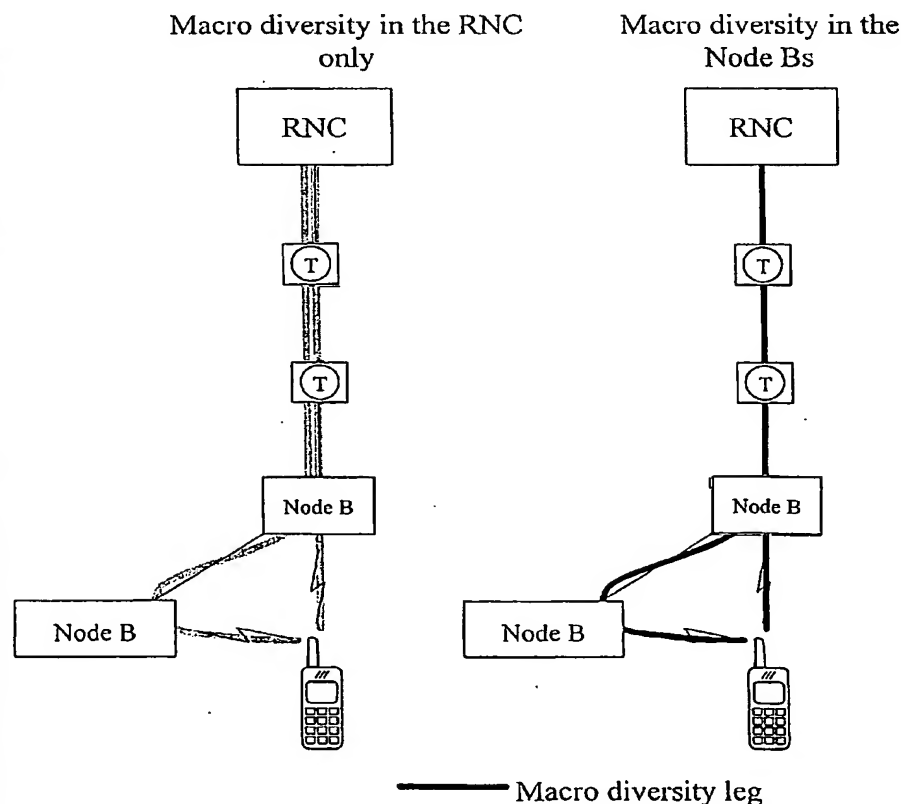
(72) Inventors; and

(75) Inventors/Applicants (for US only): RUNE, Jo-  
han [SE/SE]; Terrängvägen 5, LIDINGÖ, SE-181 30

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: ARRANGEMENTS AND METHOD FOR HANDLING MACRO DIVERSITY IN A UNIVERSAL MOBILE  
TELECOMMUNICATIONS SYSTEM



(57) Abstract: The present invention relates to methods and arrangements for selecting one or more Diversity Handover (DHO) nodes, such as a Node B or a Radio Network Controller (RNC) executing a macro diversity functionality, in a mobile telecommunication system wherein the macro diversity functionality is distributed to one or a plurality of DHO nodes such as a RNC and its connected Node B(s) in said network. The method comprises the steps of: a.-obtaining topology information comprising a hop-by-hop route from the RNC to each of its connected Node Bs and at least one metric for each hop in the route, and b.-using an algorithm for selecting one or more DHO node(s), whereby the algorithm comprises the steps of: -forming a macro diversity tree of the routes by means of the obtained topology information, and -selecting the Node B(s) and/or the RNC and/or other DHO enabled node(s), resulting in the best accumulated metric for all potential data flows between the RNC and its connected Node B(s) in the macro diversity tree of routes, as the DHO node(s).



Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**Declaration under Rule 4.17:**

— *of inventorship (Rule 4.17(iv)) for US only*

**Published:**

— *with international search report*